

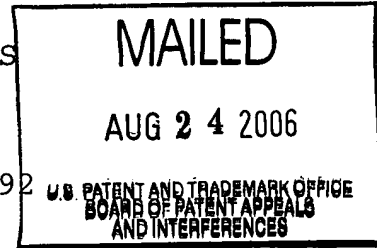
The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte VIKTORS BERSTIS

Appeal No. 2006-1600
Application No. 10/015,492



ON BRIEF

Before JERRY SMITH, SAADAT, and HOMERE, Administrative Patent Judges.

SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1-19, which constitute all the claims pending in this application.

We reverse.

BACKGROUND

Appellant's invention is directed to image processing including sensor design and moiré reduction. Among the interference patterns resulting from uniform grid-like features of the image is the moiré pattern which often resembles crosshatch halftones across at least a part of the digital image which does not represent any actual feature.

Representative independent claim 1 is reproduced below:

1. A method of producing a two-dimensional sensor array for imaging, comprising the steps of:

determining a plurality of sensor positions, each position having a spacing in a first axis from a datum point according to a first non-uniform predictable deterministic distribution schema, and each position having a spacing in a second axis from said datum point according to a second predictable deterministic non-uniform distribution schema;

providing a two-dimensional array of sensors, each sensor being positioned on said array according to the determined positions in said first and second axes; and

providing a means for sampling said sensors such that a two-dimensional imaging sensor array having non-uniform sensor distribution is realized.

The Examiner relies on the following references in rejecting the claims:

Resnikoff et al. (Resnikoff) 4,574,311 Mar. 4, 1986

Tom Balph (Balph), "LFSR counters implement binary polynomial generators," May 21, 1998, EDN-Design Feature,
http://edn.com/archives/1998/052198/11df_0.6htm.

Claims 1-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Resnikoff and Balph.

Rather than reiterate the opposing arguments, reference is made to the briefs and answer for the respective positions of Appellant and the Examiner.

OPINION

The initial burden of establishing reasons for unpatentability rests on the Examiner. In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). The Examiner

must produce a factual basis supported by teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration, consistent with the holding in Graham v. John Deere Co., 383 U.S. 1 (1966). Our reviewing court requires this evidence in order to establish a prima facie case. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984); In re Cofer, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966). However, "the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion." In re Lee, 277 F.3d 1338, 1344, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002).

The Examiner relies on Resnikoff for disclosing the claimed features except for a predictable deterministic schema as the non-uniform distribution (answer, pages 5-6). The Examiner further relies on Balph for teaching the missing feature by describing the use of linear feedback shift registers for generating pseudorandom numbers (answer, page 6). Furthermore, the Examiner identifies reduction of the amount of logic as the reason for using a non-uniform predictable deterministic distribution schema for sensor placement (id.).

Appellant argues that one skilled in the art would not be motivated to combine the deterministic non-linear counter of Balph with the probabilistic Poisson disc process of Resnikoff

since the references relate to different processes based on probability and determinism (brief, page 3). Appellant further points out that the closest the references come to suggesting the combination is in using linear-feedback shift registers instead of conventional binary counters (brief, page 4).

In response to Appellant's arguments, the Examiner asserts that since Appellant has not clearly described whether the function is probabilistic or deterministic, lack of teachings in the prior art is not critical (answer, page 12). An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. "In reviewing the examiner's decision on appeal, the Board must necessarily weigh all of the evidence and argument." In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). In this case, as discussed by Appellant (reply brief, page 5), the portion of specification relied on by the Examiner (page 12, lines 6-9) does in fact describe predictable processes while the claims also require a deterministic schema.

We also disagree with the Examiner that any teaching in Resnikoff suggests replacing a Poisson distribution with a uniform distribution. What Resnikoff suggests is actually an alternate sampling array for the situations where avoiding aliases and obtaining a greater signal-to-noise ratio for lower frequencies (col. 5, lines 62-68) is desired. As such, the

Examiner has failed to provide sufficient evidence to show that such substitution is motivated or the polynomial function has anything to do with the design of the claimed image array.

We also find the Examiner's assertion (answer, page 14) in support of the combination based on Appellant's failure to provide evidence of undesirable effect resulting from the replacement to be misplaced. As also argued by Appellant (reply brief, page 5), we note that it is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983).

In view of our analysis above, we find that the Examiner has failed to set forth a prima facie case of obviousness because the necessary teachings and suggestions related to the claimed deterministic distribution schema, as recited in independent claims 1, 9 and 12 are not shown. Accordingly, based on the weight of the evidence and the arguments presented by the Examiner and Appellant, we do not sustain the 35 U.S.C. § 103 rejection of claims 1, 9 and 12 as well as claims 2-8, 10, 11 and 13-19, dependent thereon, over Resnikoff and Balph.

Appeal No. 2006-1600
Application No. 10/015,492

CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 1-19 under 35 U.S.C. § 103 is reversed.

REVERSED

Jerry Smith
JERRY SMITH

JERRY SMITH
Administrative Patent Judge

Mahshid D. Sadat

MAHSHID D. SAADAT
Administrative Patent Judge

BOARD OF PATENT
APPEALS
AND
INTERFERENCES

Jean R. Homere

JEAN R. HOMERE
Administrative Patent Judge

Appeal No. 2006-1600
Application No. 10/015,492

ROBERT H. FRANZ
P.O. BOX 23324
OKLAHOMA CITY, OK 73123